

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Firestone Polymers LLC
Firestone Polymers - Lake Charles Facility
Sulphur, Calcasieu Parish, Louisiana
Agency Interest Number: 1244
Activity Number: PER20080001
Proposed Permit Number: 0520-00007-V2**

I. APPLICANT

Company:

Firestone Polymers - Lake Charles Facility
PO Box 1361
Lake Charles, Louisiana 70602-1361

Facility:

Firestone Polymers LLC
1801 Hwy 108 E
Sulphur, Calcasieu Parish, Louisiana
Approximate UTM coordinates are 468088 m East and 3339463 m North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

Firestone is a synthetic rubber manufacturing facility which produces different grades of styrene-butadiene rubber (SBR) and polybutadiene rubber (PBR) with continuous and batch reactors. The SBR and PBR are produced from butadiene, either with or without styrene monomers, in a solvent base of commercial hexane. Commercial hexane is composed primarily of n-hexane but also contains varying amounts of other isomers of hexane. After polymerization of the polybutadiene or butadiene-styrene copolymers, small amounts of additives are combined with the rubber product to impart the desired characteristics to the type and grade of rubber being produced.

The rubber is separated from the solvent through a water/steam stripping operation (desolventization) to form crumb rubber. Recovered hydrocarbons from the desolventization units are routed to purification and storage areas where hexane is purified for reuse in the process. The crumb product is dried through a series of steps to lower water content to product specification. Rectangular bales are formed from the rubber crumb, which are wrapped in plastic film and shipped via truck or rail.

To manufacture these products, Firestone utilizes piping, boilers, pumps, dryers, tanks, conveyors and other related equipment. Raw materials are received at the facility via railcars, tank trucks and pipelines. The products are shipped out by trucks and railcars.

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The emissions from the continuous and batch front-end process vents are combined in a closed vent system and controlled by the flare having 98% destruction efficiency.

The facility uses stripping technology along with periodic crumb sampling to comply with the requirements of NESHAP, 40 CFR 63, Subpart U from the back-end processes. The wastewater streams are classified as Group 2. Group 1 tanks are equipped with floating roof or are routed to the flare. Drying line, boilers, cooling towers, low pressure storage tanks, solvent storage tanks, and monomer storage tanks emissions are grouped and the emissions are capped for each group. This gives Firestone flexibility to meet market and customer demands.

Firestone Polymers - Lake Charles Facility is a designated Part 70 source. The facility is currently operating under the following permit listed below:

Permit No.	Unit or Source	Date Issued
0520-00007-V1	Lake Charles Facility	July 30, 2006

In addition, PSD Permit PSD-LA-672 dated July 30, 2003 was also issued to the facility.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire (EIQ) dated January 31, 2008 were submitted requesting a Part 70 Operating permit renewal. A revised application was submitted on June 30, 2008 requesting a renewal/modification to the current Permit No. 0520-0007-V1. Additional information as of July 31, 2008, was also received.

Project

Firestone is proposing a modification to the existing permit as follows:

1. Change the consumption of natural gas in the Dryers and the Boilers;
2. Increase the hours of operation of the temporary boiler;
3. Reconcile the Wastewater Treatment System emissions based on the use of Water9 and new sampling data;
4. Reconcile VOC emissions from the Flares;
5. Revise the tank inventory to reflect the tanks taken out of service;
6. Revise fugitive emissions based on enhanced monitoring under LDAR program;
7. Revise the Insignificant Activities List and the General Condition XVII Activities List based on the recent audit conducted by the facility; and

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8. Incorporate the Firewater Pump Engine approved under the Case by Case on September 25, 2006;
9. Add a new continuous Reactor R-400, which will only increase emissions due to fugitive components; and
10. Add a new SBR rubber product to the existing batch processing lines, which will increase the emissions due to fugitive components and the overall production of SBR rubber will not change.

Proposed Permit

Permit No. 0520-00007-V2 will be the renewal/modification of Part 70 operating permit No. 0520-00007-V1 for the Lake Charles Facility.

Permitted Air Emissions

The permitted emissions from the Lake Charles Facility in tons per year are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
PM ₁₀	40.90	39.24	- 1.66
SO ₂	0.89	0.76	- 0.13
NO _x	143.98	126.54	- 17.44
CO	37.74	37.09	- 0.65
VOC	1671.46	1493.29	- 178.17

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

ID No.	Requirement	Note
96-10 Process Fugitives	NESHAP, 40 CFR 63, Subpart I	The facility produces Styrene-butadiene and Polybutadiene rubber products
Entire Facility	NESHAP, 40 CFR 63, Subpart U	Group I Polymers and Resins

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Prevention of Significant Deterioration/Nonattainment Review

Prevention of Significant Deterioration (PSD) review is not required as the criteria pollutants overall emissions have decreased.

Streamlined Equipment Leak Monitoring Program

The facility is not operating under any Streamlined Equipment Leak Monitoring Program

MACT Requirements

Facility shall control toxic air pollutants in accordance with LAC 33:III.Chapter 51 – Comprehensive Toxic Air Pollutant Emission Control Program and Leak Detection and Repair (LDAR) Program.

Air Quality Analysis

Emissions associated with the proposed renewal/modification were screened to ensure compliance with the NAAQS and Louisiana Ambient Air Standard (AAS). Preliminary screening indicated that the AAS was exceeded for 1,3-butadiene. Refined modeling was performed for 1,3-butadiene. The model results indicated an exceedance of the AAS for 1,3-butadiene at the receptors located on the adjacent industrial property. The facility submitted an exemption request for the exceedance under the LAC 33:III5109.B.2 and proposed to install controls to reduce 1,3-butadiene emissions by 90 percent in the wastewater stream. Based on the controls, annual emissions of 4.32 tons per year were used for 1,3-butadiene in the model. The Department reviewed the request and determined that the conditions for an exemption were met by the facility. All receptors located on non-industrial property were below the AAS for 1,3-butadiene. For details see the proposed permit.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

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V. PERMIT SHIELD

None requested.

VI. PERIODIC MONITORING

The facility shall monitor monthly weighted average residual organic HAP content from the back-end of an elastomer production process (Styrene-butadiene and Polybutadiene rubber production) when in operation as per the requirements of NESHAP, 40 CFR 63, Subpart U – National Emission Standards for Hazardous Air Pollutants Emissions: Group I Polymers and Resins. Refer to “Specific Requirements” of the proposed permit.

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VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H₂S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C (“Prevention of Significant Deterioration of Air Quality”) and D (“Nonattainment New Source Review”).

Nitrogen Oxides (NO_x) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀ – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – Maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

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Sulfur Dioxide (SO₂) – An oxide of sulfur.

Sulfuric Acid (H₂SO₄) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.